

Course Outline for PHP & MySQL
PHP303: Advanced
Duration: 5 days

WHO SHOULD ATTEND:

The course is aim for participants who wanted to know further on PHP Programming and MySQL Database.

PREREQUISITES:

Participant has been working several years with PHP and MySQL or has attended Intermediate course.

MODULES:

1. Cultivating Good Programming Practices

- Defining and maintaining coding conventions and standards
 - Why is it important
 - Case Study : PEAR Coding Standards
- Complete and Proper documentation
 - Documentation using comments – How much is too much?
 - Introducing phpDocumentor
 - phpDocumentor syntax
 - Basic DocBlock constructs
 - Including text formatting in DocBlocks
 - DocBlock templates
 - using tags
 - Viewing the Documentation thru the Web Interface
 - Generating Documentation in HTML and PDF format
- Introduction to Code Versioning control using CVS
- Ensuring that your PHP output (HTML/CSS) complies with w3c standards
 - Why do I need to comply?
 - W3c markup validation services for HTML/XHTML/XML/CSS

2. A closer look at variables and functions

- Variable scope revisited – using *global* vs. *static*
- Fun with variable variables
- Variable Function
- Creating functions with variable length argument lists
- Coding dynamic functions using *create_function()*
- Introducing References
- References and arrays
- Functions : passing arguments by Reference
- Functions : returning by Reference

3. Handling file uploads and downloads

- File Upload process overview
- Creating HTML forms for file uploads
- Handling the file upload requests
- Configuring the PHP file upload feature in *php.ini*
- Providing file downloads of arbitrary type
- Case Study: preventing downloads from external links

4. Interaction with the file system

- Querying for status of local files
- Opening files for reading and writing
- Reading content of files using *fgets()*
- Writing strings into files using *fputs()*
- Reading binary data from file using *fread()*
- Moving file pointer using *fseek()*
- Using the Directory object to list directory content
- Navigating file structure using *is_dir()* and *chdir()*
- Creating and removing directories with *mkdir()* and *rmdir()*
- Modifying file permissions with *chmod()*, *chown()* and *chgrp()*

5. Session management in PHP

- What is session management
- Basic session functionalities
- Implementation of a simple session
- Configuring session management
- Tracking variables across a session
- Unregistering session variables and destroying sessions

6. Providing user authentication

- Identifying web users
- Using HTTP Authentication
- Authenticating users by IP Address
- Custom authentication using MySQL and session management

7. Advanced MySQL

- Understanding the MySQL Privilege System in Detail
- Locking and concurrency
- Speeding up database queries with indexes
- General optimization tips
- Different table types
- Loading data from a file
- Making your database more secure
- Case Study : Creating a database abstraction layer for portability

8. A primer on web application security

- Security through obscurity?
- Global variables and form data
- Executing shell commands from PHP
- What are SQL Injections
- Using URLs that are search-engine-friendly yet secure
- How secure is *include()*
- Using PHP *safe* mode
- Using SSL and HTTPS

9. Efficiency Debugging

- Measuring performance
- Speeding up your code
- Understanding the types of programming errors
- Error Reporting Levels and settings
- Programmed debugging aid
- Triggering your own errors
- Predicting and handling errors gracefully
- In-line debugging
- Remote debugging
- Simulating HTTP Connections for debugging

10. Putting it all into practice – Lab project

- Step-by-step creation of a simple web application that involves tracking of session variables, user authentication, and file system interaction
- Discussions of not reinventing the wheel, and guided research on available PHP libraries and projects that can be used to speed up development work